

Threshold Criteria for Cleanup Grants

1. **Applicant Eligibility:**

- a. **Eligible Entity:** The City of Chicopee, Massachusetts is a general purpose unit of local government.
- b. **Site Ownership:** The City of Chicopee acquired the former Racing Oil Service Station property through tax foreclosure on November 19, 2009 as recorded on December 14, 2011 - Hampden County Registry of Deeds, Book #18089, page 546.

2. **Letter from the State or Tribal Authority:**

See letter from the Massachusetts Department of Environmental Protection (MassDEP) located in the Attachments Section.

3. **Site Eligibility and Property Ownership Eligibility:**

- a. **Basic Site Information:** Former Racing Oil Service Station
181 Center Street
Chicopee, MA 01013
Owner: City of Chicopee
- b. **Status & History of Contamination at the Site:** **The Former Racing Oil Service Station** consists of a former gasoline fueling station located on approximately 0.28 acres of property in the mixed use/residential neighborhood of Chicopee Center. The property has remained undeveloped since December 2004 when the removal of an on-site kiosk, pump islands and three underground storage tanks (USTs) was completed. The Site is currently covered with pavement and the remnants of a concrete pad where the gasoline pumps were located. The Site was assessed most recently in 2012 through a Targeted Brownfield Assessment (TBA) from Region 1 of the U.S. Environmental Protection Agency (U.S. EPA).

According to historical documents, the Site has been a retail gasoline service station since approximately 1920. Former business names include Pride Convenience and Republic Oil. Racing Oil was the most recent company to operate at the Site. Site improvements consisted of a single-story kiosk, pump dispensers and a paved parking area. According to Chicopee Fire Department Records, three 100,000-gallon gasoline USTs were installed on the property in 1974. These USTs were upgraded with cathodic protection in December 1998 and ultimately removed in December 2004.

Several releases of petroleum products have been reported to the Massachusetts Department of Environmental Protection (MassDEP) since 1987. Gasoline-related compounds have been detected in soil and groundwater samples collected within the former UST graves as well as in soil and groundwater samples collected from downgradient areas beyond the northwest border of the property. Contaminants of concern include gasoline-related constituents such as benzene, toluene, ethylbenzene, xylenes (BTEX), naphthalene, methyl tert-butyl ether (MtBE), volatile petroleum hydrocarbon (VPH) ranges and metals in soil and groundwater.

Due to contaminant releases encountered at the Site during the 1980s and 1990s, several investigations were undertaken. The following provides a summary of Release Tracking Numbers (RTNs) that have been assigned to the Site since 1987 by MassDEP:

- **RTN 1-00044** in 1987 after a gasoline release from a leaking UST impacted soil and groundwater. A Class B-1 Response Action Outcome (RAO) was submitted to MassDEP in February 1997 for this release, indicating that this release no longer poses a significant risk to human health or the environment.
- **RTN 1-12664** in October 1998 after an operator discovered a 422-gallon inventory discrepancy. Additionally, approximately 6 inches of light non-aqueous phase liquid (LNAPL) were discovered in a monitoring well downgradient from the pump islands and volatile organic compounds (VOCs) were detected above 5 milligrams per liter (mg/L) in a monitoring well located within 30 feet of a residence.
- **RTN 1-12892** in 1999 when a pressure drop detected in one of the product lines represented a threat of release. Subsequent UST and product line testing failed to identify the source of the pressure drop, as no leaks were detected.
- **RTN 1-19116** in June 2013 following completion of a Targeted Brownfield Assessment at the Site, funded by Region 1 of the U.S. EPA. Reportable concentrations of chromium, nickel and chloroform were detected at the Site. The City complied with all required MassDEP reporting requirements.

Prior to the 2012 TBA, site characterization efforts included installation of approximately 28 soil borings and 27 monitoring wells within and downgradient to the Site. Soil sampling results detected the presence of BTEX, naphthalene, MtBE, and VPH. VPH concentrations (C9-C10 aromatics) were detected in soils above Massachusetts Contingency Plan (MCP) Method 1 Standards for Category S-1/GW-2 and S-1/GW-3 soil.

Several rounds of groundwater sampling were completed as part of the initial characterization of the Site. Gasoline-related contaminants were detected in groundwater samples above MCP Method 1 Standards for Category GW-2 and GW-3 groundwater. The extent of the contaminant plume was delineated to extend west below Center Street to Park Street. Prior to the TBA, the most recent groundwater data had been collected during the summer of 2005.

On December 9, 1998, 73.27 tons of gasoline-impacted soil were generated during the UST system upgrade and removed from the Site under a Bill of Lading (BOL). The excavation activities were approved by MassDEP under the IRA for RTN 1-12664. A Phase III Remedial Action Plan (RAP) and Phase IV Remedial Implementation Plan (RIP) were submitted to MassDEP in 2003 recommending high vacuum extraction (HVE) and monitored natural attenuation (MNA) as the Site remedy to address petroleum contamination in groundwater. In November 2004, the Chicopee Fire Department reportedly ordered the Site owner to remove the three USTs present on-site and in December 2004, these tanks were removed.

In 2006, a Revised Phase III/Phase IV was submitted to MassDEP by Racing Oil, LLC's

consultant. The revised remedy included biosparging, MNA and an Activity and Use Limitation (AUL). It is believed that this remedy was ever implemented at the Site, since the MassDEP files do not contain any further documentation of response actions and a series of financial inability applications are located in the MassDEP file for the Site.

The City completed tax foreclosure proceedings in late 2011 and applied for Targeted Brownfield Assessment (TBA) funds from EPA Region 1 in early 2012. The 2012 TBA determined that historical releases of petroleum hydrocarbons occurring because of former Site operations have resulted in soil and groundwater contamination at levels that could pose a risk to human health and the environment. The primary source of contamination is believed to be within the former UST area, where historical releases of gasoline reportedly occurred. Soil sampling data and field screening information collected during the TBA identified a zone of contaminated soil within the former UST area that appears to be residual contamination from historical releases from the tanks. This zone of contaminated soil extends vertically from the bottom of the backfill material placed after tank removal to the top of a silt layer that is encountered at approximately eight feet below ground surface (bgs) in the east (upgradient) portion of the Site to approximately 16 feet bgs in the west (downgradient) portion of the Site. The horizontal extent of soil contamination appears to extend from the easternmost UST and the former concrete pad toward the west and northwest property boundaries (paved parking area and Center Street, respectively).

Petroleum constituents released to the environment in the UST area migrated downward to the water table and dissolved into Site groundwater. Dissolved contaminants subsequently migrated horizontally with the flow of groundwater to create a contaminant plume extending to the northwest across Center Street. The horizontal extent of C5-C8 aliphatics contamination in groundwater exceeding MCP Method 1 GW-2 risk assessment standards extends from the former UST area to the northwest approximately 250 feet past the northwest wall of the commercial building at 178 Center Street; and is approximately 125 feet wide. A portion of the VPH plume extends beneath a commercial building located at 178 Center Street.

- c. Sites Ineligible for Funding: The Racing Oil Site is (a) not listed, proposed to be listed on the National Priorities List; (b) not currently subject to unilateral administrative orders, court orders, administrative orders on consent, or judicial consent decrees issued to or entered into by parties under CERCLA and (c) not either subject to the jurisdiction, custody or control of the U.S. government.
- d. Sites Requiring a Property-Specific Determination: The Racing Oil Site does not include properties subject to/with (a) planned or ongoing removal actions under CERCLA; (b) facilities that have been issued or entered into a unilateral administrative order, a court order, an administrative order on consent, or judicial consent decree or to which a permit has been issued by the United States or an authorized state under RCRA, FWPCA, TSCA or SDWA; (c) facilities subject to RCRA corrective action (§3004(u) or §3008(h)) to which a corrective action permit or order has been issued or modified to require the implementation of corrective measures; (d) land disposal units that have submitted a RCRA closure notification or that are subject to closure requirements specified in a closure plan (e) a release of PCBs and all or part of the property is subject to TSCA remediation or (f) facilities receiving monies for cleanup from a LUST trust fund.

- e. Environmental Assessment Required for Cleanup Proposals: The Targeted Brownfields Assessment (TBA) for the Racing Oil Site was prepared by Nobis Engineering, Inc. for the U.S. EPA under Contract No. EP-S1-06-03, Task Order No. 0082-SI-BZ-0010. A final TBA Report was released by Nobis in May 2013. TBA investigation activities and reporting were conducted in accordance with the EPA-approved Field Task Work Plan/Quality Assurance Project Plan (FTWP/QAPPA) prepared by Nobis on November 29, 2012 and approved by U.S. EPA on December 4, 2012. The TBA is an equivalent Phase II site assessment in accordance with ASTM E1903-11.

Property Ownership Eligibility

- f. CERCLA § Liability: Not required for Petroleum Sites
- g. Enforcement or Other Actions: Not required for Petroleum Sites
- h. Information on Liability and Defenses/Protections: Not required for Petroleum Sites
- i. Information on the Property Acquisition: Not required for Petroleum Sites
- ii. Timing and/or Contribution Toward Hazardous Substance Disposal: Not required for Petroleum Sites
- iii. Pre-purchase Inquiry: Not required for Petroleum Sites
- iv. Post-Acquisition Uses: Not required for Petroleum Sites
- v. Continuing Obligations: Not required for Petroleum Sites

i. Petroleum Sites:

- i. Current and Immediate Past Owners: The City of Chicopee is the current owner, Racing Oil, LLC is the immediate past owner.
- ii. Acquisition of Site: The City of Chicopee acquired the former Racing Oil property through tax foreclosure on November 19, 2009, as recorded in the Hampden County Registry of Deeds on December 14, 2011, Book No. 18089, page 546.
- iii. No Responsible Party for the Site: The City of Chicopee as the current owner has not dispensed or disposed of petroleum or petroleum product contamination, or exacerbated the existing petroleum contamination at the Site and did not own the Site when any dispensing or disposal of petroleum (by others) took place. The City has taken reasonable steps to assess contamination on the Site by applying for Targeted Brownfields Assessment (TBA) funds from Region 1 of the U.S. EPA and Brownfields Assessments available through the Pioneer Valley Planning Commission (PVPC). The final TBA report was delivered to the City in May 2013.

Racing Oil, LLC, the Site's immediate past owner, did own the Site when it was operated as a gasoline service station. Therefore, Racing Oil, LLC was owner of the Site when the dispensing of petroleum or disposal of petroleum product contamination, or exacerbation the existing petroleum contamination at the Site took place. Racing Oil did take some reasonable steps to address petroleum contamination at the Site prior submitting Financial Inability (FI) information to MassDEP

in 2007. Since 2007, Racing Oil has re-applied for FI status, with the most recent file in the MassDEP database extending FI status through October 2013.

Prior to submitting FI materials in 2007, records indicate that Racing Oil took steps to remediate the releases identified at the site. On December 9, 1998, 73.27 tons of gasoline-impacted soil were generated during the underground storage tank (UST) system upgrade and removed from the Site under a Bill of Lading (BOL). The excavation activities were approved by MassDEP under the IRA for RTN 1-12664.

A Phase III Remedial Action Plan (RAP) and Phase IV Remedial Implementation Plan (RIP) were submitted to MassDEP in 2003 recommending high vacuum extraction (HVE) and monitored natural attenuation (MNA) as the Site remedy to address petroleum contamination in groundwater.

In November 2004, the Chicopee Fire Department reportedly ordered the Site owner to remove three USTs present on-site and in December 2004, those tanks were removed by Racing Oil.

In 2006, a Revised Phase III/Phase IV was submitted to MassDEP by Racing Oil's consultant. The revised remedy included biosparging, monitored natural attenuation (MNA) and an Activity and Use Limitation (AUL). It appears that this remedy was ever implemented at the Site, as MassDEP files do not contain any further documentation of response actions and Racing Oil submitted financial inability applications beginning in 2007.

iv. Cleaned Up by a Person Not Potentially Liable: The City of Chicopee, the Site owner and Applicant, did not dispense or dispose of petroleum or petroleum product, or exacerbate the existing petroleum contamination at the Site. The City has taken reasonable steps to assess contamination on the site by applying for Targeted Brownfields Assessment (TBA) funds from Region 1 of the U.S. EPA and Brownfields Assessment funds from the Pioneer Valley Planning Commission (PVPC). The final TBA report was delivered to the City in May 2013.

v. Relatively Low Risk: The Site is a 'relatively low risk' Site, as defined by EPA, as compared to other petroleum or petroleum-contaminated site in Massachusetts. The Site is not receiving or using Leaking Underground Storage Tank (LUST) trust fund monies.

Nobis Engineering, the Consultant retained by Region 1 of the U.S. EPA, who completed the Site's Targeted Brownfield Assessment (TBA) determined through the TBA that no Imminent Hazards, Critical Exposure Pathways, or Significant Release Migration conditions, as defined in the MCP, are present at the site. Additionally, historic data reviewed during the TBA process indicated there was no risk of vapor intrusion issues at neighboring properties. Current concentrations documented in the TBA are equivalent to, if not lower, than the concentrations documented in the reviewed historic data, therefore vapor intrusion is not believed to be an exposure pathway at this site. The City has secured additional assessment funding from the Pioneer Valley Planning Commission and will complete additional indoor air quality testing at a neighboring property to confirm the absence of intrusion issues.

vi. Judgments, Orders, or Third Party Suits: To the City's knowledge, no responsible party is identified for the Site through, 1) a judgment rendered in a court of law or an administrative order that would require a person to assess, investigate, or clean up the site; 2) an enforcement action

by federal or state authorities against any party that would require any person to assess, investigate, or clean up the site; or 3) a citizen suit, contribution action, or other third-party claim brought against the current or immediate past owner, that would, if successful, require the assessment, investigation, or clean-up of the site.

vii. Subject to RCRA: The Site is not subject to any order under Section 9003(h) of the Solid Waste Disposal Act.

viii. Financial Viability of Responsible Parties: The City of Chicopee, as current owner, is not identified as responsible for contamination at the Site. Racing Oil, LLC, however, is identified as responsible for contamination at the Site. Racing Oil did address contamination issues at the property through 2007, before filing a Financial Inability (FI) application to MassDEP in 2007. Racing Oil has re-applied for FI status numerous times since 2007 with the most recent documents available extending FI status through October 2013. Please refer to the State Petroleum Eligibility Determination Letter included in the Attachments section for additional information. Per MassDEP's letter, "...the former owner could not complete all required assessment and/or remediation because of financial inability..."

4. Cleanup Authority and Oversight Structure:

- a. Describe how you will oversee the cleanup at the site: The Commonwealth of Massachusetts does not administer a voluntary clean-up program and the City of Chicopee, as property owner, is obligated under the Massachusetts Contingency Plan (MCP) to implement response actions at the property. The Commonwealth requires property owners to hire a Licensed Site Professional (LSP) if cleanup activities are deemed necessary. As defined by the Commonwealth, the LSP, "ensures that actions taken to address contaminated property comply with Massachusetts regulations and protect public health, safety, welfare and the environment." In Massachusetts, LSPs are licensed by the state Board of Registration of Hazardous Waste Site Cleanup Professionals.

Should the City receive funding for this Cleanup proposal, the City will release a Request for Proposals for Licensed Site Professional Services for the Racing Oil Site. The City will follow all federal (40 CFR 31.36) and state public procurement guidelines during the process and will retain a qualified LSP to provide LSP services related to oversight, assessment and cleanup of petroleum contamination at the Site. The primary environmental regulation governing cleanup of the Site is the Massachusetts Contingency Plan (MCP).

The retained LSP will report directly to the City's Office of Community Development. Any additional contractors needed to perform the proposed cleanup project will be retained following all federal (40 CFR 31.36) and state public procurement guidelines.

- b. Provide your plan to acquire necessary access to adjacent/neighborhood properties: In the event access to adjacent properties is required, the City is prepared to execute access agreements with adjacent property owners, including extending 'additional insured's liability coverage, for consultants and/or contractor activities. Such activities may include either short or long term arrangements, leases, easements or some form of deed restrictions or activity and use limitations (AULs). The City will involve appropriate legal counsel for any such arrangements, as required.

5. Cost Share:**a. Statutory Cost Share:**

i. Demonstrate how you will meet the required cost share: The City of Chicopee will meet the 20% cost share through the use of Community Development Block Grant (CDBG) funds.

ii. The City of Chicopee is not requesting a waiver of the cost share requirement.

6. Community Notification:

The City hosted a public meeting at City Hall on [REDACTED]. The public meeting was announced through advertisement in *The Republican*, the area's newspaper and on the City's website. Proposal drafts, including a draft Analysis of Brownfield Cleanup Alternatives (ABCA) were made available at the Office of Community Development and for download from the City's website. Two representatives from the City's Office of Community Development were present and no community members attended. [REDACTED] comments were submitted to the Office of Community Development by the December 17th deadline. The required documentation including the advertisement, sign-in sheet and public meeting summary are included in the Attachments Section.

Please note that a separate public outreach program, including multiple public meetings, were part of two previous studies completed for the neighborhood including the 'Chicopee Gateways Plus – Downtown Revitalization Plan,' completed in August 2009 and the West End Brownfields Area-wide Plan (AWP) completed in June 2012. The AWP was funded through a U.S. EPA pilot Brownfields Area-wide Planning pilot grant awarded to the Pioneer Valley Planning Commission in 2010. Reference is made to Section 3 of the Narrative for additional information.

Ranking Criteria for Cleanup Grants

1. Community Need:

- a. Targeted Community and Brownfields: *Targeted Community:* The City of Chicopee's West End neighborhood is one of the oldest industrial communities in the United States. Ideally situated near the confluence of the Chicopee and Connecticut Rivers, the area's earliest factories were built before 1820. Around 1830, the Dwight Canal was completed, providing water power and barge access for rapidly expanding textile, munitions and shoe manufacturers. As the industrial base increased, a densely-built residential neighborhood grew towards the nearby Center Street corridor to serve the mill worker population. This blue-collar neighborhood of mostly Irish, French-Canadian and Polish immigrants thrived for over a century. However, during the past several decades, the demise of manufacturing, aging facilities and suburban competition have caused industrial establishments to abandon the mills – leaving behind large, vacant industrial structures and a community searching for environmental and economic solutions.

Today, the West End is an urban neighborhood located in the southwestern corner of the City. Roughly 190 acres in size, the neighborhood comprises approximately one percent of the City's land area. The area is bordered by the Connecticut River to the west, the Chicopee River to the north, Chicopee Street to the northeast and Center Street to the south/southwest. It is bisected by Interstate 391 and a rail corridor, which connect the area to the broader region but also create a barrier between the neighborhood and the Connecticut River. Additionally, I-391 has ultimately resulted in the rerouting of through-traffic around downtown Chicopee.

The West End's contemporary character is defined as a mixed-use setting of commercial, residential and industrial properties. Of the roughly 310 parcels in the neighborhood, 53% are residential, 12% are commercial, 3% are industrial and 10% are mixed use while 8% are tax-exempt. Of the residential properties, nearly 90% were constructed prior to 1940 – showcasing the lack of new development and investment in the West End during the last few decades. The neighborhood is home to a U.S. Post Office, Fire House, the Springfield Street Historic District as well as the Dwight Manufacturing Company Housing District. Approximately 17% of the parcels (20.7 acres) are vacant, 6% are parking lots and a significant number have been identified as underutilized. An additional 35.3% (67.7 acres) have been identified as Brownfields. The deteriorated economic and physical conditions in the West End are now apparent in many neglected or abandoned properties, including two highly visible mill complexes with multiple underutilized and vacant buildings.

Demographic Information: Encompassing Census Tract 8109.01, Block Group 1, the West End is home to an estimated 1,948 people, which is roughly 3.5% of Chicopee's population (Census 2010). As Table I details, significant number of the neighborhood's residents are either under the age of 18 (24.5%) or above the age of 50 (26.8%). American Community Survey (ACS) five year estimates ('08-'12) dictate that up to 12.8% of the neighborhood's population reported Veteran Status while up to 38.8% of the neighborhood's population reported some disability.

Housing affordability is a challenge for the West End. Over 71.2% of the neighborhood's 997 housing units are renter-occupied with 77.9% of the neighborhood's total population living in rental units. The resulting low owner-occupied percentage (18%) has contributed to further disinvestment

and instability. The Citywide owner-occupied rate is approximately 59%. More than half of renters are considered rent burdened – paying more than 30% of their income towards rent. Nearly 11% of all housing units are vacant, which is nearly double the citywide rate of 5.6%. Additionally, according to the West End Brownfields Area-Wide Plan, nearly one-third of all households in the neighborhood consist of single mothers and their children.

Table I: Target Community – Census Tract 8109.01 Select Population & Housing Data

Population – Under 18 years	24.5% (477 people)
Population – Over 50 years	26.8% (522 people)
Veteran Status	5.6% - 12.8% (61-189 people)
Population Reporting Disabilities	7.2% - 38.8% (181-924 people)
Owner Occupied Housing Units	18% (179 units)
Population in owner-occupied	22.1% (430 people)
Renter-occupied Units	71.2% (710 units)
Population in renter-occupied	77.9% (1,518 people)
Vacant housing units	10.8% (108 units)
*Data from the 2010 U.S. Census	

Table II: Demographic Information Comparison

	Target Community				
	Census Tract 8109.01	City of Chicopee	Hampden County	Massachusetts	United States
Population	1,948*	55,298*	463,490*	6,547,629*	308,745,538*
Unemployment Rate	8.6% ±5.5 [^]	8.7% [†]	8.5% [†]	7.1% [†]	6.7% [†]
Poverty Rate	33.5-55.9% [‡]	11.3-15.5% [§]	17.8-20.6% [°]	11.6-12.2% [°]	15.8-16.0% [°]
% Minority	27.3%*	13.2%*	23.5%*	19.6%*	26.7%*
Per Capita Income	\$12,254 ± \$2,328 [‡]	\$24,056 ± \$1,143 [§]	\$25,626 ± \$742 [°]	\$34,907 ± \$338 [°]	\$27,319 ± \$46 [°]
Median Household Income	\$21,349 ± \$5,600 [‡]	\$46,396 ± \$2,119 [§]	\$48,865 ± \$2,517 [°]	\$65,339 ± \$645 [°]	\$51,371 ± \$53 [°]

*Data from the 2010 Census data

[^] Median Percentages based on Margins of Error in 5-year ('08-'12) American Community Survey Unemployment Estimates

[†] Data from the Bureau of Labor Statistics

[‡] Based on Margins of Error in 5-year ('08-'12) American Community Survey Estimates

[§] Based on Margins of Error in 3-year ('10-'12) American Community Survey Estimates

[°] Based on Margins of Error in 1-year ('12) American Community Survey Estimates

As seen in Table II, Income and Poverty issues further challenge the neighborhood's residents. The estimated percentage of West End residents obtaining a high school diploma or higher is approximately 12.1% less than the City-wide estimate (70.7% ±10.6%, 82.8% ±1.8%, respectively). The estimated percentage of West End residents who have obtained a bachelor's degree or higher

is approximately 9.1% less than the City-wide estimate ($8.7\% \pm 4.5$, $17.8\% \pm 2.0\%$, respectively). While the neighborhood's unemployment rate seems to be within a comparable range to the City's – it should also be noted that $54.3\% \pm 8.8\%$ of the neighborhood's population is not in the labor force. Further, the neighborhood's poverty rate is at least triple that of the Citywide rate while both the per capita income and median household income are at least 50% less than the City as a whole.

Today, the presence of these Brownfields poses serious environmental health concerns to children, minority, disabled and low to moderate income residents.

Brownfields: The West End contains a concentration of known and suspected Brownfields and suffers disproportionately from them. The district is home to 3.5% of the City's population, but it contains about 5.4% of all sites in Chicopee reported under the Commonwealth's cleanup program, including six releases regulated under MassDEP Tier 1A (i.e. most hazardous) permits. There are only three other Tier 1A permits in the City. On a per capita basis, the area has 49% more reported waste sites (of all categories) than the Massachusetts rate. Moreover, parcels containing known Brownfields cover at least 35.3% (67.08 acres) of the neighborhood's land area, presenting a tremendous challenge to (and opportunity for) revitalization. ***The entire West End neighborhood is no more than 100 yards from the nearest reported contaminated site.***

Representing 67.077 acres of the study area (35.3%) the following 15 Brownfields were identified and studied for redevelopment potential through the U.S. EPA pilot Brownfields Area-Wide Planning (AWP) Program. The AWP grant was funded as part of the federal EPA-HUD-DOT Partnership for Sustainable Communities and was awarded to the City's partner, the Pioneer Valley Planning Commission (PVPC) during the first AWP pilot round.

1. Cabotville Mill Complex – 165 Front Street (12.29 acres);
2. Former Lyman Company – 60 Depot Street (1.82 acres);
3. City Frontage – Front Street (1.50 acres);
4. Mill Site – 101 Front Street (0.41 acres);
5. Former Hampden Steam Plant Site – Lower Depot Street (22.00 acres);
6. Delta Park – Lower Depot Street (17.08 acres);
7. Riverfront Property – Exchange Street (8.06 acres);
8. Former Mobile Service Station – 229 Center Street (1.02 acres);
9. Chicopee Water Department – 27 Tremont Street (0.28 acres);
10. Center Street Parking Lot – Center Street (0.38 acres);
11. Collegian Court – 89 Park Street (0.54 acres);
12. Former Freemason's Lodge – 81 Center Street (0.20 acres);
13. Former Mathis Oldsmobile – 67 Exchange Street (0.917 acres);
14. Former Racing Oil Service Station – 181 Center Street (0.28 acres); and
15. Former VOC Building – 152 Center Street (0.30 acres).

The Former Racing Oil Service Station consists of a former gasoline fueling station located on approximately 0.28 acres of property. The property has remained undeveloped since December 2004 when the removal of an on-site kiosk, pump islands and three underground storage tanks (USTs) was completed. The Site is currently covered with pavement and the remnants of a concrete pad where the gasoline pumps were located. The Site was assessed most recently in

2012 through a Targeted Brownfield Assessment (TBA) from Region 1 of the U.S. Environmental Protection Agency (U.S. EPA).

The City completed tax foreclosure proceedings in late 2011 and applied for Targeted Brownfield Assessment (TBA) funds from EPA Region 1 in early 2012. The 2012 TBA determined that historical releases of petroleum hydrocarbons occurring because of former Site operations have resulted in soil and groundwater contamination at levels that could pose a risk to human health and the environment. The primary source of contamination is believed to be within the former UST area, where historical releases of gasoline reportedly occurred. Soil sampling data and field screening information collected during the TBA identified a zone of contaminated soil within the former UST area that appears to be residual contamination from historical releases from the tanks.

Petroleum constituents released to the environment in the UST area migrated downward to the water table and dissolved into Site groundwater. Dissolved contaminants subsequently migrated horizontally with the flow of groundwater to create a contaminant plume extending to the northwest across Center Street. A portion of the VPH plume extends beneath a commercial building located at 178 Center Street.

Cumulative Environmental Issues: Nature in the area is also compromised by Brownfields, primarily by seasonal-related oil releases into the Chicopee River delta from contaminated soil and groundwater in the Delta Park site. Habitat for two endangered mussel species, migratory birds and the endangered short nose sturgeon is threatened.

Brownfields also play a role in the area's disheartening public health indicators, which include high rates of diabetes and disability that area known to be associated with obesity. Despite being located at the confluence of two scenic rivers, it is very difficult for residents to access the waterfronts for exercise and recreation. The sole land access point to the proposed Conte National Wildlife Refuge segment in the Chicopee River Delta (through the Depot Street Viaduct) is blocked off by fencing associated with remediation activities – ongoing for 20+ years – at the Delta Park property. The Connecticut Riverfront is likewise walled off from the neighborhood by a railroad and Interstate 391. Currently, the only recreational facilities in the West End include a basketball court and kids' wading pool.

b. Impacts on Targeted Communities:

Health Concerns: Health metrics are not routinely tracked at the sub-municipal level in Massachusetts, but Chicopee as a whole ranks 47th highest of the state's 351 municipalities in childhood lead-poisoning rate, which is strongly correlated with the age of local housing stock. As measured by hospitalizations, diabetes in the City is 9.1% higher than the state rate, but among Hispanics – a large and growing component of the West End population – it is more than quadruple the state rate for that ethnicity.

Welfare Concerns: The demographic data presented in Section 1.a above, showcases the significant disinvestment the West End has suffered over the last few decades. The nearly 11% housing vacancy rate is almost double the City-wide rate combined with the under-utilization of other properties (commercial vacancy is above 15%) is a symptom of the neighborhood's overall

decline since the 1950s. As noted in the 2009 *Chicopee Gateway Plus Downtown Revitalization Plan*, the downtown used to be a thriving employment center, but in the last half century, it has suffered from many significant changes. These changes include the loss of manufacturing businesses, the closing of the West Springfield Bridge and the development of the Holyoke Mall north of downtown Chicopee. The West End has also not seen much investment in the form of new development through the last decade. Nearly 90% of the housing units were built before 1940 and have age-associated risks from lead paint and asbestos.

Housing affordability and poverty are significant challenges in the West End. Over 71.2% of the neighborhood's housing units are renter-occupied. The resulting low owner-occupied percentage (18%) has contributed to disinvestment and instability. More than half of renters are considered rent burdened – paying more than 30% of their income towards rent. Nearly 11% of all housing units are vacant, which is nearly double the City-wide rate of 5.6%. Further, the rate of subprime mortgages is, at 11.1% about 25% higher than state and City levels, indicating an elevated potential for foreclosures.

Future job prospects for residents are limited by a lack of educational attainment with an estimated 30% of adults never graduating from high school and only 8.7% holding a bachelor's degree or higher (barely one-quarter the national rate). Lyman Paper, one of the neighborhood's last major industrial employers, has left the neighborhood over three years ago, vacating an historic mill facility and moving its 130 jobs to a new facility in one of the City's modern industrial parks.

The Massachusetts Office of Environmental Affairs (EOEA) lists Census Tract 8109.01 as meeting two of four Environmental Justice population criteria. The criteria met include: households earning 65% or less of statewide household income and 25% or more of residents are minority. The Massachusetts Department of Environmental Protection (MassDEP) has classified Chicopee as an Economically Distressed Area (EDA), defined as areas within the Commonwealth that are eligible for targeted assistance under the Brownfields Act. Further, the Community Development Financial Institutions Fund (CDFI) lists Census Tract 8108 in Severely Distressed Status and Tract 8107 in Eligible Status for the New Market Tax Credit (NMTC) Program which the CDFI administers. Such classifications are based on demographic information, including income, poverty and empowerment zone status.

Chicopee is also a federally designated Empowerment Zone/Entitlement Community per the U.S. Department of Housing and Urban Development (HUD), with all block groups in Tract 8109.01 defined as having 51% or greater total number of low to moderate income residents.

This data emphasizes that the West End does contain sensitive populations whose health, welfare and environment are highly impacted by the presence of the Brownfields in the West End neighborhood.

The 2012 Targeted Brownfields Assessment (TBA) determined that historical releases of petroleum hydrocarbons occurring because of former Site operations have resulted in soil and groundwater contamination at levels that could pose a risk to human health and the environment. Petroleum constituents released to the environment in the UST area migrated downward to the water table and dissolved into Site groundwater. Dissolved contaminants subsequently migrated horizontally with the flow of groundwater to create a contaminant plume extending to the northwest across Center

Street. A portion of the VPH plume extends beneath a commercial building located at 178 Center Street. While representing a historic loss of neighborhood jobs, the Racing Oil Site, because of known contamination, has diminished redevelopment potential – commercial or recreational - both desperately needed to address Health/Welfare Concerns in the neighborhood.

- c. *Financial Need: i. Economic Conditions:* The indicators of distress described above are strongly associated with and are exacerbated by, the presence of Brownfields in the West End. With the closure of nearly all manufacturing enterprises along the canal, the neighborhood's main economic driver is gone, leading directly to high unemployment and low property values. Of the three larger industrial Brownfields in the neighborhood, two (Delta Park and the former Hampden Steam Plant) suffer from known contamination, which seriously complicates potential reuse options in the short term. Contamination continues to make it difficult for these Brownfields to compete with greenfield sites in outlying areas, despite low land prices, industrial zoning and excellent highway access.

Several suspected commercial and residential Brownfields in the neighborhood also contribute to the area's challenges. Local residents surveyed during the Downtown Revitalization Planning process noted criminal activity at abandoned lots, including drug dealing and waste dumping. Academic studies have established that blighted/abandoned properties are also associated with reduced property values (and tax revenues) nearby. In addition, sites like the former Racing Oil property (e.g. abandoned gas stations) located in prominent locations contribute to a sense, reported by 61% of residents, that the area is, "a little sad," which is reflected in their voting of abandoned/blighted property redevelopment as a top community revitalization investment priority.

Recent economic conditions and significant weather events have further stressed the City's financial resources. Avery Dennison, a binder and label manufacturer, located in the Westover Industrial Park announced in fall 2013 plans to close their facility in Chicopee and relocate production and distribution to existing facilities in Meridian, Mississippi and Tijuana, Mexico. The closure, which began in January 2014 is expected to result in the loss of 250 local jobs. Additionally, the City of Chicopee has seen additional resources diverted to cleanup and management of significant weather events. Stretching back to 2008, the most significant weather events for which the Federal Emergency Management Agency has issued Disaster Declarations or Emergency Declarations include the following:

- DR-4110 – Severe Winter Storm and Snowstorm (2013)
- DR-4051 – Severe Storm and Snowstorm (2012)
- DR-1959 – Severe Winter Storm and Snowstorm (2011)
- DR-1994 – Severe Storms and Tornadoes (2011)
- DR-4028 – Tropical Storm Irene (2011)
- DR-1813 – Severe Winter Storm and Flooding (2009)
- EM-3296 – Severe Winter Ice Storm (2008).

To better understand the severity of some of these weather events, DR-1959, a Severe Winter Storm and Snowstorm that hit the region on October 31, 2011 dropped nearly two feet of snow on the City and resulted in over \$7 million dollars in cleanup costs.

ii. *Economic Effects of Brownfields:* While the list of milestones is a source of local pride, the legacy of nearly two centuries of industrial dominance is taking its toll on our community. A decline in

manufacturing, which is a national phenomenon, has left the City with concentrated areas of vacant industrial complexes that provide no economic benefits. The City's financial needs for the assessment, clean-up and redevelopment of the West End Brownfields are challenging. Massachusetts municipalities depend on local property taxes to fund local government operations and the West End's Brownfields are contributing little in taxes to the City to support the needed public investment in these sites.

A lack of interest and demand for rehabilitating these properties along with the high costs associated with the remediation of contaminants have hindered assessment, clean-up and redevelopment efforts and are the major impediments to reuse of these blighted parcels. As such, a significant burden has been placed on Chicopee's economy and property values, which also directly affect the City's tax revenue.

2. Project Description and Feasibility of Success

- a. **Project Description:** *i. Existing Conditions:* **The Former Racing Oil Service Station** consists of a former gasoline fueling station located on approximately 0.28 acres of property. The property has remained undeveloped since December 2004 when the removal of an on-site kiosk, pump islands and three underground storage tanks (USTs) was completed. The Site is currently covered with pavement and the remnants of a concrete pad where the gasoline pumps were located. The Site was assessed most recently in 2012 through a Targeted Brownfield Assessment (TBA) from Region 1 of the U.S. EPA. The 2012 TBA determined that historical releases of petroleum hydrocarbons occurring because of former Site operations have resulted in soil and groundwater contamination at levels that could pose a risk to human health and the environment. Petroleum constituents released to the environment in the UST area migrated downward to the water table and dissolved into Site groundwater. Dissolved contaminants subsequently migrated horizontally with the flow of groundwater to create a contaminant plume extending to the northwest across Center Street. A portion of the VPH plume extends beneath a commercial building located at 178 Center Street.

The Site was identified and studied for redevelopment as part of the City's West End Brownfields Area-wide Plan (AWP) pilot project funded as part of the federal EPA-HUD-DOT Partnership for Sustainable Communities. The former Racing Oil Service Station is most closely associated with the Gateway Area - located just a few parcels away from the boundary of the Gateway. The property is defined in the AWP plan as an 'infill' site with potential reuse for small office, retail space or an electric car charging station/related transportation use or greenspace in support of the Gateway's reuse strategies, as the neighborhood's market demands shift with redevelopment of the larger priority areas. While these priority areas are tackled, the AWP suggests short term improvements to these infill sites including assessment, completion of any required clean-up activities and improving the aesthetics and marketability of these sites to showcase the City's commitment to redevelopment. This land banking strategy will provide a visible City commitment to the property until the market provides an appropriate redevelopment demand to move forward with the recommended reuse strategy.

- ii. Proposed Cleanup Plan:* The proposed cleanup plan includes soil excavation and off-site disposal with *in situ* groundwater remediation. This would include the excavation and off-site

disposal of contaminated soil from the former UST area with active treatment of the groundwater plume. The project will include the following activities:

- Excavation and off-site disposal of 1,200 cubic yards of contaminated soil;
- Dewatering of the excavation area and on-site treatment of contaminated groundwater;
- Collection of post-excavation soil samples for laboratory analysis;
- Backfilling of the excavation area with clean soil;
- Advancement of soil borings within the contaminant plume area (along the northern Site boundary and across Center Street) for the purpose of injecting treatment reagents;
- Injection of treatment reagents into the subsurface to promote *in situ* chemical oxidation (ISCO) or *in situ* bioremediation (ISB); and
- Post-injection monitoring of groundwater to evaluate progress toward cleanup.

Excavation and off-site disposal of contaminated soil will be an effective and permanent measure to eliminate potential future exposure to contamination. With respect to groundwater, additional data collection would be required to evaluate which type of *in situ* treatment technology would be most effective given the subsurface conditions at the Site. However, it is likely that at least one of these technologies would be effective to reduce contaminant levels in groundwater to achieve a Permanent Solution. It is also likely that *in situ* treatment would enable a Permanent Solution to be achieved in a shorter timeframe than natural attenuation and could be used as a contingency in the event that monitored natural attenuation does not meet the objectives of the cleanup.

b. Task Description and Budget Table:

Budget Categories	Project Tasks				
	Task I: Cooperative Agreement Oversight	Task II: Cleanup Design & Procurement	Task III: Cleanup Activities	Task IV: Post-Cleanup Monitoring	Total
Personnel					
Fringe Benefits					
Travel	\$2,500				\$2,500
Equipment					
Supplies	\$500	\$500			\$1,000
Contractual		\$40,000	\$132,000	\$24,500	\$196,500
Other					
Cost Share	\$10,000		\$30,000		\$40,000
Total	\$13,000	\$40,500	\$162,000	\$24,500	\$240,000

Task I: Cooperative Agreement Oversight (\$3,000) Two City Officials will travel to the next U.S. EPA sponsored Brownfields Conference, should one be scheduled during the three-year project period. If not those officials will participate in Brownfields related trainings. Supply costs will support the costs related to community engagement including management of a new website for the City's Brownfields Program that will debut in March 2014. The City will commit CDBG funds to cover staff time related to programmatic costs and to fulfill the necessary reporting requirements to the EPA, allowing more funds to be applied to actual assessment activities. The City of Chicopee will not use any funds for administrative purposes as prohibited by the EPA.

Outcomes and Outputs: Compilations of materials from the National Brownfields Conference or Brownfields-related trainings to share with City Officials and Staff, all required reports for submittal to the U.S. EPA including a final Analysis of Brownfields Cleanup Alternatives (ABCA), Community Relations Plan (CRP), quarterly reports and ACRES reporting.

Task II: Abatement Design & Bidding (\$40,500) Professional services related to cleanup design, preparation of bidding documents including technical specifications and bidding phase assistance. The City will comply with all federal and state procurement requirements in retaining these services. In addition, this contract will include tasks related to oversight of the cleanup contractor and any reporting necessary.

Outcomes and Outputs: Solicitation of professional services, completion of cleanup documents including technical specifications and bid documents, contract procurement and execution.

Task III: Abatement (\$162,000) Cleanup Contractor costs for mobilization/demobilization, soil excavation and off-site management, confirmatory sampling, backfill, excavation dewatering, site control and *in situ* groundwater treatment. Additional Cost Share funds will be utilized to augment the Abatement Budget.

Outcomes and Outputs: Complete clean-up and off-site management of contaminated soils & dewatering waste materials and implementation of an appropriate *in situ* groundwater treatment.

Task IV: Post-Cleanup Monitoring (\$24,500) Includes groundwater monitoring, sample analytics and reporting to confirm the degradation of the existing VPH plume that extends beyond the Site's boundaries. This monitoring will be on-going for two-three years depending *in situ* treatment selected and the speed at which the plume degrades.

Outcomes and Outputs: Confirmation of the degradation of the existing VPH Plume, monitoring reports and documented analytics. Once the success of the groundwater treatment is confirmed, a cleanup completion report will be filed.

c. **Ability to Leverage:** The City has the ability to leverage additional Community Development Block Grant (CDBG) funds to supplement EPA grant funds during the project should it become necessary to do so. The City has committed to revitalization efforts in the West End and downtown Chicopee, with the expenditure of \$1,235,000 of CDBG and American Recovery and Reinvestment Act (ARRA) funds to complete infrastructure improvements in the neighborhood. The City has also invested upwards of \$300,000 in other infrastructure improvements throughout the neighborhood.

Additional funds that can be leveraged by this project are available from the Pioneer Valley Planning Commission (PVPC) administered Brownfields Revolving Loan Fund (RLF) funded through the U.S. EPA. The fund currently has \$1.5 million available for sub-grants and loans and can be utilized for cleanup planning, remedial activities and confirmatory sampling. In addition, should the Massachusetts Brownfields Fund be recapitalized by the State Legislature, the City would be eligible to apply for additional funding to support cleanup through the MassDevelopment managed Brownfields Priority Fund. Please see support letters regarding these leveraged resources in the Attachments Section.

3. Community Engagement and Partnerships

- a. *Plan for Involving Targeted Community & Other Stakeholders; and Communicating Project Progress:* Community engagement regarding the West End neighborhood has been ongoing for the past four years. In 2009, the City received funding from the Massachusetts Department of Housing and Community Development (DHCD) to identify specific 'brick and mortar' improvements to help revitalize downtown Chicopee, of which the West End neighborhood is a portion. Known as the '*Chicopee Gateway Plus – Downtown Revitalization Plan*,' efforts were completed in August 2009 and presented to Chicopee officials and residents.

The plan's foundation is based on extensive community and stakeholder outreach and participation. The professional team led a community meeting, four stakeholder meetings and a community survey which garnered participation from roughly 250 residents. This outreach effort set the tone for planning by identifying specific problems to address, discussing previous planning efforts and defining specific revitalization priorities. The Stakeholders played a key role in guiding the development of an appropriate strategy and assisted in generating specific action items. Some of these action items, including sidewalk improvements, downtown lighting, downtown greening and pedestrian safety have been addressed in recent public infrastructure improvements. Please see the Attachments Section of a list of participating stakeholders.

In 2010, the City in collaboration with the Pioneer Valley Planning Commission (PVPC) was successful in securing grant funds from the EPA's pilot Brownfields Area-Wide Planning (AWP) Program, to specifically plan for the redevelopment of Brownfields within the West End neighborhood. The AWP grant was funded as part of the federal EPA-HUD-DOT Partnership for Sustainable Communities. The Gateway Plan's Stakeholders, showcasing their commitment to downtown Chicopee, agreed to again provide oversight of the planning process and have been involved in activities since August 2010.

The West End Brownfields AWP engagement efforts included a variety of outreach venues including two community workshops, a community design charrette, visual preference surveys, blogs, a Facebook page and YouTube videos of public meetings. These efforts have kept stakeholders and interested residents invested in the planning process while initiating the creation of an implementation plan. Should the City's cleanup proposal for the Racing Oil property be successful in securing funding, the assembled Stakeholder's group will continue to provide oversight as the Brownfields AWP Plan is further implemented.

Efforts to keep the target community informed have occurred through numerous avenues. Copies of all presentations and reports have been made available at the Chicopee Public Library and for download from the City's website. Local newspaper and news stations have also covered most activities with reports and articles. The public meetings have been recorded and uploaded to YouTube and the project's Facebook page. Additionally, the City has created a page off its main website specifically for the West End, where all documents and presentations are accessible.

The City plans to continue communicating with residents through the above mentioned avenues and through the development of HEAL Chicopee a new website specifically designed to serve as a clearinghouse of information regarding all projects be administered through the City's Brownfields Program. The new website will launch in March 2014 and includes a feedback mechanism for

visitors to ask questions or community ideas/concerns about the property. A project sign will be erected at the Site providing information to residents on where to find additional project information.

Should a language barrier be identified, the City will make every effort to procure appropriate interpreters. The planning team has already worked to address language barriers by providing all materials in English and Spanish while also being prepared to translate to Portuguese and Polish if requested. The City is also prepared to accommodate those with special needs such as the blind and the deaf.

- b. *Partnerships with Governmental Agencies:* Partnerships between the City of Chicopee and local, state and federal agencies have been crucial to the work that has been accomplished this far and reaching future goals. The City has formed a strong partnership with MassDEP, the Commonwealth's environmental authority which oversees Massachusetts' cleanup program. MassDEP chairs the Brownfield Support Team (BST) for the RiverMills Brownfields project, an on-going redevelopment project in the adjacent Chicopee Falls neighborhood. The BST, which is in its third year of project sites, strives to build collaboration between required local, state and federal agencies to streamline the redevelopment process. Dedicated partners who sit on the BST include MassDEP (which chairs the team) U.S. EPA, MassDOT, MassHistoric, MassDevelopment and the Massachusetts Attorney General's Office. Governmental agency partners have assisted the City with technical expertise, review of environmental reports and the identification of funding for assessment and cleanup. Region 1 of the U.S. EPA provided Targeted Brownfields Assessment funds and oversight for assessment and cleanup planning at the Racing Oil Site.

The City's Health Department has been extremely active on the City's internal Task Force, created specifically to keep all key City Departments informed of assessment and clean-up of Brownfields throughout the City. The Health Department has provided oversight of potential health concerns and is easily accessible to West End Stakeholders and the community. The City is also collaborating with the Pioneer Valley Planning Commission regarding future connections to the Connecticut River Bikeway project. If successful, the connection would tie the City and the West End Neighborhood into a regional recreation system. Grant funding provided to the City through PVPC that is funding the design of a portion of the regional bikeway system stems from a HUD/EPA/DOT Partnership for Sustainable Communities.

- c. *Partnerships with Community Organizations:* The City of Chicopee is pleased to include the following community organizations among those dedicated to both the Gateway Plus Plan and West End Brownfields Area-wide Plan. These organizations are firmly committed to revitalization efforts for the West End's 15 identified Brownfields and are providing oversight of the West End Brownfield AWP's implementation:
- **Chicopee Savings Bank** has chaired both the Gateway and Brownfields AWP Stakeholders Groups. Additionally, Chicopee Savings is an anchor downtown business tenant, that is highly supportive of revitalization efforts throughout the City;
 - **Elms College** is Chicopee's best known institution of higher education, located directly adjacent to downtown Chicopee and the West End neighborhood. The College is keenly aware of the importance downtown revitalization efforts hold in attracting and keeping students in Chicopee. The College's administration has invested in both the Gateway and Brownfields AWP efforts, realizing the benefits to the institution while providing 'local' education opportunities to students;

- **Valley Opportunity Council (VOC), Inc.**, is also a downtown business anchor, operating several residential, educational and commercial facilities in downtown Chicopee and the region. The VOC, '...is dedicated to eliminating poverty by providing the opportunity for our low and moderate-income neighbors, families and friends in the greater Hampden County area, to achieve greater independence and a higher quality of life' and is a key stakeholder in both the Gateway and Brownfields AWP processes as the organization realizes how revitalization efforts help to support the organization's various service programs and clientele;
- **Chicopee Neighborhood Development Corporation (CNDC)**; is a 501(c)(3) non-profit organization dedicated to, 'providing quality housing programs and projects to directly support Chicopee residents and to promote stable neighborhoods.' The CNDC owns property in the West End neighborhood and has played a committed role in the Brownfields AWP and other community planning efforts.

Letters of support from these organizations along with attendance lists from public meetings can be found in the Attachments Section.

4. Project Benefits

- a. **Health and/or Welfare and Environment:** In the long term, the project initiates the removal of severe blight from the neighborhood which will showcase the City's commitment to redevelopment while bolstering civic pride and incentivizing renewed private investment. Additionally, cleanup of the Site will eliminate the existing VPH plume that extends beyond the Site's boundaries to other private parcels. While not currently considered an exposure pathway, the cleanup of the plume's source will improve property values and adjacent parcels' marketability.

The redevelopment of the Racing Oil property also provides the potential for new construction and full/part time employment opportunities in the neighborhood. If the City's moves forward to develop green space at the Site, such a space will offer residents of the West End new modes of recreation currently not available. The increased opportunity for recreation within the West End, will improve the neighborhood's poor health statistics, specifically related to diabetes and obesity by offering residents easy access to a potential recreational amenity. Such green spaces can also be design to dually function as green infrastructure assisting with the management of stormwater while introducing additional vegetation to an urban area which has the potential to relieve increased temperatures associated with the urban heat island effect. Both of these potential uses for the Racing Oil Site are defined reasonable re-use strategies in the West End Brownfields AWP.

- b. **Environmental Benefits from Infrastructure Reuse/Sustainable Reuse:** *i. Planning, Policies or Other Tools & ii. Example of Efforts:* Redevelopment of West End Brownfields sites will incorporate a number of sustainable practices, which are defined in the West End Brownfields AWP. The City will also consider how the Site might address MassDEP's 'Sustainable Development Principles' through redevelopment. To date, the following environmental benefits from infrastructure and sustainable reuse have been identified and are considered key characteristics:

- Direct environmental improvement for a designated Environmental Justice population;

- Enhanced opportunity for strong public-private partnership to advance public amenity demands that support and incentivize private investment;
 - Equitable, mixed-use development based on known market demands for affordable housing for targeted age groups of 35 years & younger and 55 years & older;
 - Provide educational opportunities for unveiling Chicopee's rich history, environmental systems and impacts of industry on our landscapes;
 - Creation of a new, community-desired green space network, which will provide alternate modes of transportation and crucial recreational opportunities;
 - Establish links between the West End and surrounding neighborhoods;
 - Re-establish access to the Connecticut and Chicopee Rivers;
 - Align development with existing public transportation systems;
 - Design landscape areas as multi-functional spaces layering recreation with stormwater low-impact design (LID) elements, habitat restoration while aligning the design of these spaces with the objectives of the Sustainable Sites Initiative (SITES);
 - Exploration of alternative energy systems, especially geo-thermal and solar systems;
 - Increase the density of downtown Chicopee; and
 - Expand the Chicopee River Walk and Bikeway and connect with the Connecticut River Walk and Bikeway linking the City and neighborhood with a regional recreation resource;
- c. *Economic and Community Benefits:* i. *Economic or Other Benefits:* Brownfields Area-wide Planning is on-going for the West End. To date, the team has identified a number of 'niche' market areas that the West End and the identified Brownfields can support. These 'niche' markets include flexible, low-cost industrial space, accommodating growth in existing businesses, housing for 35 years & younger and 55 years & older, mixed use parcels, energy/agricultural production (non-food crops), housing, office space and small retail establishments. Redevelopment of West End Brownfields holds a number of economic outcomes for the West End and the City. The Site's Market Analysis provided evidence for each of these programs on a site-by-site basis and will be detailed and quantified as part of the final AWP. ***In the long-term, three economic outcomes are certain: the creation of new jobs, additional business and new housing opportunities which will increase tax revenues for the City.***

Short-term economic benefits include building an understanding of the clean-up needs of each West End Brownfield. In understanding the level of contamination on each property, the City can then work in partnership with private landowners to identify sources of funding to move clean-up forward in preparation for redevelopment. This would emphasize the City's commitment to reinvesting in the West End and help spur private reinvestment in the neighborhood

The major benefit of this project is the assessment of Brownfields sites, for which very little environmental data currently exists. Additionally, the AWP has already identified new open space and recreational amenities in high demand within the neighborhood, including an extension of the Chicopee River Walk and Bikeway, a Canal Walk and community gardens. Access to the Chicopee River will be restored and existing ecological communities enhanced as a unique natural resource. The City is also committed to Low Impact Development (LID) strategies for storm and flood water management. Further, the City can explore a variety of opportunities for preserving and retelling Chicopee's industrial history in the neighborhood, especially with the City's youth. Positive outcomes will include improvement to the neighborhood's character and well-being, enhanced access to both rivers and the revitalization of a once bustling, industrial neighborhood.

ii. *Job Creation Potential: Partnerships with Workforce Development Programs:* While a local Brownfields Training Program is not active in Western Massachusetts, the City of Chicopee will make every effort to network with other job training programs including the City's High School Vocational Program; CareerPoint, a local work force and economic development career center based in Holyoke, MA and the Westover Jobs Corps located in Chicopee.

5. Programmatic Capability and Past Performance

- a. *Programmatic Capability:* The City of Chicopee's Office of Community Development is well versed in the coordination and management of federal grants in support of numerous programs from social services and roadway improvements to larger scale planning projects like the RiverMills Vision Plan and the West End Brownfields Area-wide Plan. The Office is also currently leading the construction of the City's new Senior Center, an \$8 million project with federal, state and local funding sources.

The City of Chicopee has been receiving Community Development Block Grant (CDBG) and HOME funds as an entitlement community for the past 39 years. Staff in the Community Development Office include Carl Dietz, Director of Community Development; Kathleen Lingenberg, Director of Housing; Lee Pouliot, Planner & Administrator; Christopher Nolan, Project Manager and Julia Dias, Operations Manager. These five individuals are responsible for the all aspects of the administration of both the CDBG and HOME programs.

The Community Development Office has served as the lead office for the City's Brownfields Program since 2010. Under the direct supervision of Carl Dietz and Thomas Haberin, Lee Pouliot will manage the project should this proposal be funded. Lee is a lifelong resident of Chicopee who completed a Master's Degree in Landscape Architecture at Cornell University in 2010. His final studio project focused on the City's former Uniroyal and Facemate properties, resulting in an in-depth understanding of the challenges and opportunities of assessment and cleanup. He assisted in the management of the \$1.6 million demolition for the former Facemate buildings and in the management of the West End Brownfields Area-Wide Planning Project, awarded to the City's partner the Pioneer Valley Planning Commission (PVPC) and funded through a pilot U.S. EPA grant program. Lee will have additional support in managing this grant from Chris Nolan, who is currently managing the Senior Center's construction.

Plan to retain and/or replace leadership: Lee Pouliot and all Community Development staff are firmly committed to the City of Chicopee and to seeing redevelopment of the Racing oil property through completion. We firmly believe this project has the potential to have an invaluable impact on the West End neighborhood while boosting Chicopee's local economy and supporting further redevelopment. Community Development's unique setting within the City allows the Office to interface with a diverse mix of City residents and professionals. Should leadership need to be replaced at any time during the administration of this grant, City Officials will move quickly to identify a qualified and invested individual to step into the position(s). The City is committed to offering opportunities for new individuals to get involved with local government 'on the ground.' The challenges associated with projects like the Racing Oil property are highly attractive to young professionals, as is evidenced by Lee's commitment to the project and City upon graduation.

System to acquire additional expertise: Another Brownfields redevelopment project in the City, RiverMills at Chicopee Falls is designated by the Commonwealth as a Brownfield Support Team (BST) project. If any additional expertise is required to successfully complete the proposed project, the City will capitalize on its BST contacts. Members of MassDEP, MassDOT, the MA Attorney General's Office, U.S. EPA and MassDevelopment who sit on the BST are committed to the City and have been available to assist with Brownfields related issues. All other professional expertise related to this project, including a Licensed Site Professional to oversee the proposed project will be retained following all applicable federal and state public procurement guidelines.

b. *Adverse Audits:* The Office of Community Development received no 'Adverse' Audit findings during the past year.

c. *Past Performance and Accomplishments:* i. *1. Compliance with Grant Requirements:* The City of Chicopee was successful in securing three EPA Brownfields Cleanup Grants and one EPA Brownfields Community-wide Assessment Grant during the FY 2012 Competitive Round as well as one Cleanup Grant during FY 2013. Those grant projects are currently on-going and remain on schedule for completion as scheduled. Required documents including work & community relation plans and ACRES reporting have been submitted per the schedule and set deadlines.

2. Accomplishments: The City was a successful grantee during the EPA Brownfields Pilot assessment program, receiving a total of \$200,000 beginning in 1996. To the best of our knowledge, the City successfully pursued assessment activities in compliance with all grant requirements and completed all necessary reporting obligations. The grant was closed on January 19, 2001. The following projects listed are listed as 'Success Stories' on EPA's website:

- Former Bay State Wire Company – In 1996, an initial Brownfields Pilot Assessment grant of \$59,000 was given to the City. Assessment work confirmed the presence of trichloroethylene (TCE), oil, grease and cadmium in the site's soil and groundwater. These activities led to a \$310,000 clean-up effort, funded through the Community Development Block Grant (CDBG). Once clean the property was sold to E. Joseph Montemagni, a private developer, for redevelopment as office space.

- Former Conway Bedding/Hallahan Lumber – Initial success at the former Bay State Wire Company site led to an additional \$30,000 in funds in May 1997. Completed assessments led to cleanup and demolition activities supported with CDBG resources. The site was sold to Benedict Broadcasting, an affiliate of CNBC who constructed an \$8 million state of the art digital broadcasting station for Channel 22 News.

- Former J.G. Roy Lumber – In September 1998, the EPA awarded the City with an additional \$111,000 in funds. This site received \$41,600 for assessment activities. The property was then sold to neighboring J. Polep Distribution Services, who completed remediation activities and demolished existing structures for future expansion. The City assisted with cleanup activities by providing CDBG loan funds to J. Polep.

- Former Tri-City Cleaners – Taken through tax-foreclosure, this site had a documented 67 year history of contamination. This property received over \$35,000 for assessment activities. Assessments were completed by 2000 and with the support of CDBG & other City/State funds the property was redeveloped as a local Department of Motor Vehicle (DMV) branch that has been in operation since 2002.

Analysis of Brownfields Clean-up Alternatives

Former Racing Oil Service Station
City of Chicopee, Massachusetts

Introduction and Background

Site Location: Former Racing Oil Service Station
181 Center Street
Chicopee, MA 01013
Owner: City of Chicopee

Previous Uses of the Site: The Former Racing Oil Service Station property consists of approximately 0.28 acres of land, originally developed during the 1920s. Former business names included Pride Convenience and Republic Oil. Racing Oil was the most recent company to have operated the Site as a gasoline service station. Site improvements consisted of a single-story kiosk, pump dispensers and a paved parking area. According to Chicopee Fire Department records, three 10,000-gallon gasoline underground storage tanks (USTs) were installed on the property in 1974. These USTs were upgraded with cathodic protection in December 1998 and ultimately removed in December 2004.

The City took ownership of the Site on December 14, 2011 through the tax foreclosure, initiated on November 19, 2009. The Racing Oil property is part of the City's West End neighborhood and was identified as a key redevelopment property in the *Chicopee West End Brownfields Area-wide Plan* (AWP) completed in June 2012 with funding from an U.S. Environmental Protection Agency (U.S. EPA) Brownfields Area-wide Planning Pilot grant awarded to the Pioneer Valley Planning Commission (PVPC), the City's project partner.

Past Assessment Findings: Several releases of petroleum products have been reported to the Massachusetts Department of Environmental Protection (MassDEP) since 1987. Gasoline-related compounds have been detected in soil and groundwater samples collected from the former UST area and from downgradient areas beyond the northwest border of the property. Contaminants of Concern (COCs) include gasoline-related constituents such as benzene, toluene, ethylbenzene, xylenes (BTEX), naphthalene, methyl tert-butyl ether (MtBE), volatile petroleum hydrocarbon (VPH) ranges as well as metals in soil and groundwater.

Due to contaminant releases encountered at the Site during the 1980s and 1990s, several investigations were undertaken. The following provides a summary of Release Tracking Numbers (RTNs) that have been assigned by MassDEP to the Site since 1987:

- **RTN 1-00044** was assigned in 1987 after a release of gasoline from a leaking UST impacted soil and groundwater. A Class B-1 Response Action Outcome (RAO) was submitted to MassDEP in February 1997 for this release, indicating that the release no longer poses a significant risk to human health or the environment.

- **RTN 1-12664** was assigned in October 1998 after an operator discovered a 422-gallon inventory discrepancy. Additionally, approximately six inches of light non-aqueous phase liquid (LNAPL) were discovered in a monitoring well downgradient from the pump islands and volatile organic compounds (VOCs) were detected above five milligrams per liter (mg/L) in a monitoring well located within 30 feet of a residence.
- **RTN 1-12892** was assigned in 1999 when a pressure drop detected in one of the product lines represented a threat of release. Subsequent UST and product line testing failed to identify the source of the pressure drop, as no leaks were detected.
- **RTN 1-19116** was assigned in June 2013 following completion of a Targeted Brownfield Assessment (TBA) at the Site, funded by Region 1 of the U.S. EPA. Reportable concentrations of chromium, nickel and chloroform were detected in soils at the Site. The City complied with all required MassDEP reporting requirements.

Prior to the TBA completed in May 2013 with support from Region 1 of the U.S. EPA, site characterization efforts included installation of approximately 28 soil borings and 27 monitoring wells within and downgradient to the Site. Soil sampling results detected the presence of BTEX, naphthalene, MtBE and VPH. VPH concentrations (C9-C10 aromatics) were detected in soils above Massachusetts Contingency Plan (MCP) Method 1 Standards for Category S-1/GW-2 and S-1/GW-3 soil.

Several rounds of groundwater sampling were completed as part of the initial characterization of the Site. Gasoline-related contaminants were detected in groundwater samples above MCP Method 1 Standards for Category GW-2 and GW-3 groundwater. The extent of the contaminant plume was delineated to extend west below Center Street to Park Street. Prior to the TBA, the most recent groundwater data had been collected during the summer of 2005.

Past Cleanup Activities: On December 9, 1998, 73.27 tons of gasoline-impacted soil were generated during the underground storage tank (UST) system upgrade and removed from the Site under a Bill of Lading (BOL). The excavation activities were approved by MassDEP under the IRA for RTN 1-12664.

A Phase III Remedial Action Plan (RAP) and Phase IV Remedial Implementation Plan (RIP) were submitted to MassDEP in 2003 recommending high vacuum extraction (HVE) and monitored natural attenuation (MNA) as the Site remedy to address petroleum contamination in groundwater.

In November 2004, the Chicopee Fire Department reportedly ordered the Site owner to remove three USTs present on-site and in December 2004, those tanks were removed.

In 2006, a Revised Phase III/Phase IV was submitted to MassDEP by Racing Oil, LLC's consultant. The revised remedy included biosparging, monitored natural attenuation (MNA) and an Activity and Use Limitation (AUL). It appears that this remedy was never implemented at the Site, since the MassDEP files do not contain any further documentation of response actions and a series of financial inability applications are located in the MassDEP file for the Site.

In November 2006, an Administrative Consent Order was signed by MassDEP and the Site owner (Racing Oil, LLC) requiring the completion of additional response actions or the submittal of Financial Inability (FI)

status. The FI paperwork was submitted and approved by MassDEP in April 2007. The most recent renewal of Racing Oil's FI status expired in October 2013.

Project Goals: The former Racing Oil Service Station is a Brownfields property, identified and studied for redevelopment as part of the City's West End Brownfields Area-wide Plannig (AWP) pilot project funded by the U.S. EPA. The City of Chicopee in collaboration with the Pioneer Valley Planning Commission was successful in securing funding through the pilot program and completed work with professional consultants in June 2012.

The West End Brownfields AWP seeks to reinvigorate and spark reinvestment in the West End by re-branding the area as an attractive, green neighborhood where people can live, work, learn and play. An overall market assessment identifies potential demand for industrail/commercial space and rental housing units, while identifying niche market commercial uses as well as appropriate target segments for mill building residences. Through realistic strategies and market-driven initiatives, this plan aims to return key West End Brownfields to productive use over the next three to five years. The plan also addresses limitations in the neighborhood's infrastructure and recommends public improvements that will facilitate private property redevelopment in the West End.

The West End Vision, as defined by the AWP, calls for the creation of a distinctive, attractive, hip, affordable and safe downtown neighborhood and is based on market findings, public input, existing conditions and successful case studies of Brownfields redevelopment across the Commonwealth. Noted as part of the plan, the revitalization of older urban centers should encompass a scale and development type that is distinctive from residential and commercial spaces available in suburban and rural locations within the area's larger geographic region. Older urban centers appeal to businesses and residents who desire an environment that offers distinctive buildings and spaces, walkable streets, density and amenities that cannot be replicated in other city neighborhoods or suburban areas, all qualities the West End exhibits.

Based on this Vision, the project team developed concepts for the West End that focused on five primary areas: Mill properties, Delta Park/former Hampden Steam Plant, the Riverfront, Residential and the Gateway. Focusing efforts on these key areas will have significant synergistic effects on the redevelopment potential of other properties in the West End.

The former Racing Oil Service Station is most closely associated with the Gateway Area - located just a few parcels away from the boundary of the Gateway. The property is defined in the AWP plan as an 'infill' site with potential reuse for small office, retail space or an electric car charging station/related transportation use or greenspace in support of the Gateway's reuse strategies, as the neighborhood's market demands shift with redevelopment of the larger priority areas. While these priority areas are tackled, the AWP suggests short term improvements to these infill sites including assessment, completion of any required clean-up activities and improving the aesthetics and marketability of these sites to showcase the City's commitment to redevelopment. This land banking strategy will provide a visible City commitment to the property until the market provides an appropriate redevelopment demand to move forward with the recommended reuse strategy.

Summary of Targeted Brownfields Assessment, May 2013: Nobis Engineering, Inc. completed Targeted Brownfields Assessment efforts at the Racing Oil property for the U.S. EPA under Contract No. EP-S1-06-

03, Task Order No. 0082-SI-BZ-0010. The TBA's objective was to fill data gaps associated with historic environmental assessment activities conducted at the Site and to assess the current extent of soil and groundwater contamination. Soil and groundwater sampling data collected during the TBA were compared to Massachusetts Contingency Plan (MCP) criteria to evaluate the nature and extent of contamination and to estimate potential risks associated with contaminated environmental media. TBA investigation activities and reporting were conducted in accordance with a U.S. EPA approved Field Task Work Plan/Quality Assurance Project Plan (FTWP/QAPPA) prepared by Nobis on November 29, 2012 and approved by U.S. EPA on December 14, 2012.

Nobis conducted TBA field activities in January and April 2013. Soil boring advancement, soil sampling and monitoring well installation were completed on January 22 & 23, 2013. A monitoring well inventory, well development, groundwater level measurements, groundwater sample collection and monitoring well elevation survey were conducted between April 8 & 11, 2013.

Historical releases of petroleum hydrocarbons occurring because of former Site operations have resulted in soil and groundwater contamination at levels that could pose a risk to human health and the environment. The primary source of contamination is believed to be within the former UST area, where historical releases of gasoline reportedly occurred. Soil sampling data and field screening information collected during the TBA identified a zone of contaminated soil within the former UST area that appears to be residual contamination from historical releases from the tanks. This zone of contaminated soil extends vertically from the bottom of the backfill material placed after tank removal to the top of a silt layer that is encountered at approximately 8 feet below ground surface (bgs) in the east (upgradient) portion of the Site to approximately 16 feet bgs in the west (downgradient) portion of the Site. The horizontal extent of soil contamination appears to extend from the easternmost UST and the former concrete pad toward the west and northwest property boundaries (paved parking area and Center Street, respectively). The total estimated volume of contaminated soil present in this area is 800 cubic yards (1,200 tons).

Petroleum constituents released to the environment in the UST area migrated downward to the water table and dissolved into Site groundwater. Dissolved contaminants subsequently migrated horizontally with the flow of groundwater to create a contaminant plume extending to the northwest across Center Street. The horizontal extent of C5-C8 aliphatics contamination in groundwater exceeding MCP Method 1 GW-2 risk assessment standards extends from the former UST area to the northwest approximately 250 feet past the northwest wall of the commercial building at 178 Center Street and is approximately 125 feet wide. A portion of the volatile petroleum hydrocarbon (VPH) plume extends beneath the commercial building located at 178 Center Street.

The following is a summary of the comparison of analytical data collected during the TBA to MCP Method 1 risk assessment standards:

- Fuel-related compounds detected above Method 1 S-1/GW-2/GW-3 standards in soil samples included C5-C8 aliphatics, C9-C10 aromatics, C9-C18 aliphatics and chloroform. These exceedances of MCP Method 1 risk assessment standards for fuel related compounds in soil were limited to soil samples collected from soil borings advanced within the former UST area.
- The heavy metals chromium and nickel were detected above Method 1 S-1/GW-3 risk assessment standards in soil samples collected from the former UST area and from borings advanced in the downgradient plume area. These metals were also detected above Reportable

Concentrations for Category RCS-1 Soil, which represented a new 120-day release condition that was reported to MassDEP (RTN 1-19116) by the City on June 12, 2013. These metals are not believed to be associated with the release of gasoline that occurred at the Site.

- Groundwater contaminants detected above Method 1 GW-2/GW-3 standards include C5-C8 aliphatics, C9-C12 aliphatics, and total xylenes. Method 1 standards were exceeded in groundwater samples collected from MW-SA-1, CEA-4, and MW-A.

Based on the environmental data collected during the TBA and a comparison to MCP Method 1 risk assessment standards, soil and groundwater remediation is necessary to reduce contaminant levels so that a Condition of No Significant Risk can be achieved.

Applicable Regulations and Cleanup

Cleanup Oversight Responsibility: The Commonwealth requires property owners to hire a Licensed Site Professional (LSP) if cleanup activities are deemed necessary. As defined by the Commonwealth, the LSP “ensures that actions taken to address contaminated property comply with Massachusetts regulations and protect public health, safety, welfare and the environment.” In Massachusetts, LSPs are licensed by the state Board of Registration of Hazardous Waste Site Cleanup Professionals.

Should the U.S. EPA fund this cleanup proposal, the City will release a Request for Proposals for Licensed Site Professional Services for the Racing Oil Site. The City will follow all federal (40 CFR 31.36) and state public procurement guidelines during the process and will retain a qualified LSP to provide LSP services related to oversight, assessment and cleanup of petroleum contamination at the Site. The environmental regulation governing cleanup of the Site is the Massachusetts Contingency Plan (MCP).

The retained LSP will report directly to the City’s Office of Community Development. Any additional contractors needed to perform the proposed cleanup project will be retained following all federal (40 CFR 31.36) and state public procurement guidelines.

Laws & Regulations Applicable to the Cleanup: The MCP is the state regulation that governs the cleanup of petroleum constituents that are released to the environment. In addition to these regulations, MassDEP has developed numerous guidance documents and policies that govern the manner in which the presence of contaminated environmental media are determined and the manner in which they are removed, handled and disposed. Such regulations are very prescriptive and close adherence to the requirements is required, except in unusual circumstances when site-specific requirements are waived by state regulators. In this case, the LSP has jurisdiction over most activities involving the assessment and remediation of contaminated soil and groundwater, with MassDEP providing an oversight role.

There are numerous policy and guidance documents that also regulate the assessment and remediation of contaminated environmental media. The following is a summary of guidance documents published by MassDEP with a specific focus on the assessment and remediation of sites contaminated with petroleum constituents as well as disposal sites located in urban areas:

- MassDEP [WSC-02-411 Characterizing Risks Posed by Petroleum Contaminated Sites: Implementation of the MADEP VPH/EPH Approach](#);
- MassDEP [WSC-94-400 Interim Remediation Waste Management Policy for Petroleum Contaminated Soils](#);
- MassDEP [Updated Petroleum Hydrocarbon Fraction Toxicity Values for the VPH/EPH/APH Methodology](#) (2004);
- MassDEP [Technical Update: Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil](#)

Evaluation of Clean-up Alternatives

As part of the TBA process, Nobis Engineering evaluated potential cleanup alternatives based on contaminant sources and groundwater plume extents delineated during the TBA and in previous investigations. Nobis focused this evaluation on potential cleanup alternatives that: (1) are likely to achieve a level of No Significant Risk (NSR) at the Site and enable the achievement of an MCP Permanent Solution; (2) address MCP requirements regarding source elimination/control and restoration to background; and (3) appeared to be technically and economically feasible.

Clean-up Alternative A – Monitored Natural Attenuation

This option would consist solely of continued groundwater monitoring to evaluate concentration trends throughout the plume until contaminant levels were reduced to cleanup goals through natural processes. This option would include no active remediation of soil or groundwater.

Effectiveness: Based on a review of historical groundwater sampling data from the contaminant plume, this option would not likely be effective and would not achieve a Permanent Solution within a reasonable timeframe. Contaminant concentrations in monitoring wells throughout the plume area have remained high since the mid-1990s, with no discernible downward trend, suggesting either the subsurface conditions in the plume area are not amenable to natural degradation of petroleum constituents or that petroleum constituents are leaching from contaminated soils into the groundwater at a rate that is equal to or greater than the rate of natural degradation. This alternative would also not address potential risks associated with soil contamination.

Implementability: This option would be implementable using readily available resources and traditional environmental sampling and analytical methods.

Climate Change Impacts:

Clean-up Alternative B – Soil Excavation & Off-Site Disposal with Monitored Natural Attenuation

This option would include the excavation and off-site disposal of contaminated soil from the former UST area and monitored natural attenuation for the groundwater plume. Alternative B would include the following activities:

- Excavation and off-site disposal of 1,200 tons of contaminated soil;
- Dewatering of the excavation area and on-site treatment of contaminated groundwater;
- Collection of post-excavation soil samples for laboratory analysis;

- Backfilling of the excavation area with clean soil; and
- Long-term monitoring of groundwater.

Effectiveness: Excavation and off-site disposal of contaminated soil would be an effective and permanent measure to eliminate potential future exposure to contamination. Post-excavation confirmatory soil sampling would be performed to verify achievement of cleanup goals and to support evaluations of risk. The removal of contaminated soil in the former UST area would also prevent further leaching of contaminants into the groundwater, accelerating the progress of groundwater cleanup.

The effectiveness of soil excavation may be limited by the Site's physical boundaries. Elevated levels of petroleum contamination are present along the northern site boundary; therefore, soil contamination may extend beneath Center Street. Nobis assumed that excavation of soils beneath Center Street is not feasible; therefore, it is possible that some contaminated soil would remain after completion of excavation activities. However, removal of contaminated soils up to the parcel boundary would be expected to address the vast majority of soil contamination and be sufficient to achieve a Permanent Solution.

After removal of the primary source of contamination to the groundwater (i.e. soils in the former UST area), monitored natural attenuation may be an effective strategy for achievement of a Permanent Solution for groundwater. Petroleum hydrocarbons tend to be amenable to degradation through natural physical, chemical and biological processes. Without a continuing source of contamination leaching into the groundwater, concentration levels throughout the plume area may permanently decrease to acceptable levels without any active treatment. The long-term effectiveness of natural attenuation would need to be more fully evaluated prior to implementation through the collection of additional geochemical data from the aquifer to verify local conditions are amenable to natural degradation of petroleum hydrocarbons.

Implementability: This option would involve the removal and disposal of all accessible contaminated soil within the former UST area. While the geography and hydrogeology of the Site would create some technical challenges, this option would be implementable using traditional excavation methods and engineering controls. Removal of soils would be made more complex (and costly) because the limits of contaminated soil extend vertically to below the water table. This would necessitate dewatering of the excavation area to enable excavation of dry soils. Groundwater that is pumped from the excavation would then need to be treated prior to ultimate disposal, either on or off site. Additionally, excavation of soils adjacent to Center Street may require special measures to stabilize the roadway, depending upon the depth and proximity of excavation activities to Center Street.

Monitored natural attenuation would consist of periodic monitoring of groundwater to evaluate temporal variations in contaminant concentrations and geochemical conditions in the aquifer. Typically, monitoring would commence on a quarterly schedule for two or three years, after which time the progress toward cleanup objectives is evaluated. If a downward trend in concentrations can be documented and a reasonable timeframe for achievement of cleanup goals is anticipated, monitoring frequency could be reduced to semi-annual or annual. Additional monitoring wells may be added to the existing well network to gain a more comprehensive understanding of concentration trends throughout the plume area. All of these measures would be readily implementable using traditional environmental sampling and analytical methods.

Climate Change Impacts:

Clean-up Alternative C – Soil Excavation & Off-Site Disposal with *In Situ* Groundwater Remediation

This option would include the excavation and off-site disposal of contaminated soil from the former UST area, as described in Alternative B, but with active treatment of the groundwater plume instead of monitored natural attenuation. Alternative C would include the following activities:

- Excavation and off-site disposal of 1,200 cubic yards of contaminated soil;
- Dewatering of the excavation area and on-site treatment of contaminated groundwater;
- Collection of post-excavation soil samples for laboratory analysis;
- Backfilling of the excavation area with clean soil;
- Advancement of soil borings within the contaminant plume area (along the northern Site boundary and across Center Street) for the purpose of injecting treatment reagents;
- Injection of treatment reagents into the subsurface to promote *in situ* chemical oxidation (ISCO) or *in situ* bioremediation (ISB); and
- Post-injection monitoring of groundwater to evaluate progress toward cleanup.

Effectiveness: The effectiveness of this alternative with respect to soil cleanup is identical to Alternative B, which is described above. With respect to groundwater, additional data collection would be required to evaluate which type of *in situ* treatment technology would be most effective given the subsurface conditions at the Site. However, it is likely that at least one of these technologies would be effective to reduce contaminant levels in groundwater to achieve a Permanent Solution. It is also likely that *in situ* treatment would enable a Permanent Solution to be achieved in a shorter timeframe than natural attenuation and could be used as a contingency in the event that monitored natural attenuation does not meet the objectives of the cleanup.

Implementability: The implementability of this alternative with respect to soil cleanup is identical to Alternative B, which is described above. With respect to groundwater, *in situ* treatment would be readily implementable from a technical standpoint. *In situ* groundwater treatment technologies are well developed, commercially available and flexible enough to be implemented in an urban setting such as this one. The plume core is present beneath paved driveways and parking areas and therefore accessible to drilling equipment needed to inject treatment reagents into the subsurface. The only potential implementability concern for this option would be the ability to obtain access agreements from adjacent property owners, since the core of the contaminant plume and therefore the focus of *in situ* treatment efforts, is located beyond the parcel boundaries and on property that is not owned by the City.

Climate Change Impacts:

Cost Estimates for Each Alternative

Clean-up Alternative A – Monitored Natural Attenuation

There would be ***no initial capital costs to implement this option***. Annual groundwater monitoring costs would be approximately \$47,000 for quarterly sampling. Groundwater monitoring would be expected to continue for the foreseeable future, since contaminant concentrations are not likely to decrease significantly unless some active soil or groundwater remediation is performed.

Clean-up Alternative B – Soil Excavation & Off-Site Disposal with Monitored Natural Attenuation

The estimated capital costs for this alternative would be approximately **\$160,000**. Capital costs would include equipment, labor, and material costs required to excavate, transport, and dispose of contaminated soil within the former UST area; collect soil samples to characterize post-excavation soil concentrations; dewater the excavation during soil removal operations; and backfill the excavation with clean fill. Annual monitoring costs for this option would be approximately \$47,000 for quarterly sampling. After two to three years of quarterly sampling, the frequency of monitoring would likely decrease to a semi-annual or annual basis, resulting in a proportional decrease in cost. Under this cleanup option, groundwater monitoring would continue until contaminant concentrations reduced to acceptable levels due to natural processes. Additional data is needed to accurately estimate the cleanup timeframe, but it is likely to be greater than five years.

Clean-up Alternative C – Soil Excavation & Off-Site Disposal with *In Situ* Groundwater Remediation

The estimated capital costs for this alternative would be approximately **\$200,000**. Capital costs would include all the costs discussed under Alternative B plus equipment, labor and material costs required to design and install an *in situ* groundwater remediation system (either chemical oxidation or bioremediation, depending upon the findings of future treatability evaluations). Annual monitoring costs for this option would be approximately \$47,000 for quarterly sampling. After two to three years of quarterly sampling, the frequency of monitoring would likely decrease to an annual basis, resulting in a proportional decrease in cost. Under this cleanup option, groundwater monitoring would continue until contaminant concentrations reduced to acceptable levels. Additional data is needed to accurately estimate the cleanup timeframe, but it is possible that cleanup goals could be achieved in less than three years.

Recommended Clean-up Alternative:

We recommend that Alternative C, Soil Excavation & Off-Site Disposal with In Situ Groundwater Remediation be the selected Clean-up Alternative.

After an initial screening of potential remedial technologies, Nobis identified excavation and offsite disposal as the most effective and permanent cleanup alternative for soils. Soil excavation and off-site disposal is feasible and cost effective for this Site due to the depth and lateral extent of contamination in the former UST area, which are amenable to removal using traditional excavation techniques.

The initial screening of potential remedial technologies for groundwater determined that monitored natural attenuation and *in situ* groundwater treatment would both be effective, implementable and economically feasible alternatives for groundwater cleanup given the concentration levels and lateral extent of the groundwater contaminant plume. However, to minimize the cleanup timeframe and allow for redevelopment as soon as possible, the City would need to move forward with in-situ groundwater remediation.



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

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December 20, 2013

U.S. EPA New England
Brownfields Project Officer
Attn: Christine Lombard
5 Post Office Square, Suite 100
Mail Code: OSRR07-2
Boston, MA 02109-3912

Subject: **STATE PETROLEUM ELIGIBILITY DETERMINATION**
178 and 181 Center Street, Chicopee, Massachusetts

Dear Ms. Lombard:

The Massachusetts Department of Environmental Protection (MassDEP) has been requested by the Pioneer Valley Planning Commission (PVPC) of Springfield, Massachusetts to make a determination as to whether the property listed above ("site" or "property") meets the definition of a Brownfield site and whether it is eligible to use U.S. Environmental Protection Agency (EPA) Brownfields Community-Wide Assessment Grant funding, which was received during the EPA's FY12 Petroleum Site Assessment grant round. The site located at 181 Center Street is currently owned by the City of Chicopee, Massachusetts, who acquired the property via tax title in early 2012 from Racing Oil LLC.

The Racing Oil site has been a gasoline service station between 1920 and circa 2004, when operations ceased, all structures on the property were demolished, and three known underground storage tanks (USTs) and associated contaminated soils were removed. Release Tracking Numbers (RTNs) 1-00044, 1-12664 and 1-12892, assigned by the MassDEP, exist for documented releases of petroleum at the site. However, Racing Oil LLC, the owner of the site and the party performing response actions, has had Financial Inability status with MassDEP between 2006 and 2011. Hence, assessment and/or remediation required by the Massachusetts Contingency Plan (MCP) could not be completed.

The known contamination at the site has not been fully assessed. Hence, a property across Center Street from the site, known as 178 Center Street, contains an office/retail structure that is currently underutilized in part due to the lingering concerns about indoor air contaminants that may have migrated from the upgradient Racing Oil property.

The Racing Oil site is considered a critical gateway property between downtown Chicopee and Interstate 391. The Racing Oil site was highlighted in the 2012 EPA-funded Area-Wide Planning project focusing on the west

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TDD# 1-866-539-7622 or 1-617-574-6868

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end of downtown Chicopee. The funds would be used to assess the extent of contamination, including the indoor air concerns at 178 Center Street, to firm up plans for redevelopment of the area. Redevelopment has not been possible due to the open RTNs for the site.

EPA requires that MassDEP make a determination that any petroleum contaminated site seeking to use EPA Brownfield cleanup grant funding meets certain eligibility requirements. MassDEP is following EPA guideline criteria for eligibility determinations. After a review of MassDEP records and the information provided by PVPC for this property, MassDEP has determined that:

1. The subject property has documented petroleum contamination from the former use as a gasoline service station. Some assessment has been completed; however, the former owner could not complete all required assessment and/or remediation because of financial inability. The property is a "relatively low risk" site as defined by EPA. The location is not currently being assessed or cleaned up using Leaking Underground Storage Tank (LUST) funds, nor is it subject to a response under the Oil Spill Act.
2. Neither the City of Chicopee, Massachusetts nor PVPC has ever conducted any activities or otherwise contributed to any potential historic petroleum contamination at this property.
3. EPA Brownfield funding will be used for assessment activities by a party (PVPC) that is not potentially liable for the petroleum contamination on this property.
4. There are no Judgments, Orders, or Third Party Suits that identify and require a responsible party to assess, investigate, or cleanup this property.
5. This property is not subject to any order under §9003(h) of the Resource Conservation and Recovery Act (RCRA).

I hope that this information is helpful, and please feel free to contact me directly at 617-556-1007 if you have any questions or concerns.

Sincerely,



Kerry Bowie
Brownfields Coordinator, MassDEP Commissioner's Office

cc: Andrew Loew, AICP, Senior Planner/Specialist, Community Development & Brownfields, Pioneer Valley Planning Commission
Lee Pouliot, ASLA, LEED Green Associate, Planner & Administrator, City of Chicopee, Office of Community Development
Ben Fish, Brownfields Coordinator, MassDEP Western Regional Office
Angela Gallagher, Assistant Brownfields Coordinator, MassDEP Southeast Regional Office